

# UPGRADING TEACHERS' COMPETENCES TOGETHER WITH THE INDUSTRY

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*The working life relevance is constantly mentioned in relation to higher education. To better answer these working life relevance challenges we started a development project. The main goal was to upgrade teachers' knowledge of the working life practices and processes together with the industry.*

*Altogether 23 teachers worked in the industry for three months. The results are very positive: the content of the courses have changed, new teaching methods are introduced and materials are renewed. We have more guest lecturers and more courses together with the industry. Finally, new R&D-projects are planned and started.*

## Introduction

Many publications and reports have been written about development and the future of education. Typically two matters are constantly raised: the working life relevance and the quality of education. For example, according to the Lisbon strategy Higher Education Institutes (HEI) are expected to provide education that answer to the competence requirements of the working life (European Union 2004). Answering these changing and growing competence requirements need active cooperation between HEIs and the working life (Ministry of education 2006). Also an innovation report of Finnish Innovation Fund writes that Universities of Applied Sciences should primarily focus on the needs of the working life and they should further increase cooperation with companies and public sector (SITRA 2005). The role of the Universities of Applied Sciences as know-how adapters and transmitters is emphasized in other report as well (Ruokanen 2004). Furthermore, in the Regional Plan of the Regional Council of Southwest Finland the development of professional top know-how is defined as a challenge for Higher Education Institutes and the transfer of this know-how should be promoted in every possible means. (Regional Council of Southwest Finland 2005)

Teachers have a central role both in the working life related education and in the quality of education. Therefore, the development of the education requires that teachers have a possibility to update and widen their proficiencies. Actually, HEIs are encouraged to improve teachers' possibilities to consistent self-development (Ministry of Education Finland 2007). This also supports the idea of lifelong learning, since once learned competences and skills go out of date. However, new structures to support lifelong learning are needed (Confederation of Finnish Industries 2006). Especially for teachers this is essential; they have to know and master the skills and practices relevant in the working life (Confederation of Finnish Industries 2006). The educational CDIO initiative, in which our University is committed to, emphasizes the working life related education as well. One of the guiding standards "Enhancement of faculty CDIO skills" emphasizes the development of personnel know-how together with the working life. (CDIO 2007). Furthermore, Confederation of Finnish Industries defined familiarity with the future challenges and competence requirements and practices of the working life as one of the most important skills of a teacher (Confederation of Finnish Industries 2006). A teacher is also emphasized in another book: One of the main tasks of a teacher is to support students' desire to learn and skills of learning (Himanen 2007).

The school of Telecommunication and e-Business at the Turku University of Applied Sciences has an active network in the region. Many R&D-projects are running all the time, our

students have their work placements guided by our teachers and the curricula are designed together with the industry. Still, the above mentioned challenges are relevant to us as well and additional questions can be raised: Is the content of our education right?, Do we really know the practices and processes of the working life?, How could we support teachers' competence upgrading?, and How could we develop and serve the local economy even better? To answer these questions, we started planning a project that would enable 3 month working life periods for our teachers to upgrade their competences together with the industry. During the three-month period teachers would have the opportunity to really explain and show what we do and what we are able to do. The project finally started in the spring of 2006. In this paper, we describe the project, we will introduce the results of the project and finally discuss about the importance and the future of the project.

## **The project**

### **Project environment**

Turku University of Applied Sciences is one of the largest of its kind in Finland with almost 9000 students and 33 Degree Programs. Our University is organized in six units of education that promote multidisciplinary learning. Two of these units of education participated in this project: The School of Telecommunication and e-Business and The School of Healthcare. This paper is written from the viewpoint of the School of Telecommunication and e-Business.

The School of Telecommunication and e-Business represents four different fields of education: technology, business, natural sciences and culture. Our main goal is to work in close co-operation with our region and to answer the requirements of the working life. Our education and our research and development initiatives focus on applying knowledge in state-of-art problems not forgetting creation and testing of new applications and technologies. The School of Telecommunication and e-Business operates in two cities and has eight Degree Programs. Five of the programs are located in Turku and the remaining three in Salo. We educate both Bachelors of Engineering and Bachelors of Business Administration. In addition, we will start our first Master of Engineering program (Technology Management) autumn 2008. The Bachelor of Engineering is a four-year degree with 240 ECTS and Bachelor of Business Administration is a three and a half year degree with 210 ECTS. The school has approximately 1500 students of which roughly 550 study in Salo campus and 950 in Turku. The number of our own staff is ca. 100. consisting of managers, lecturers and other experts.

### **Goals of the project**

The main goal of the project was to upgrade teachers' knowledge of the working life practices and processes. Furthermore, the working period should support the professional development of the participating teachers. All this aimed at reflections on teaching and our practices as well. At the same time, our goal was to promote our networking with the local ICT sector. Furthermore, a goal was to promote the development of education, the renewal of curricula and the increase of the working life related education. In addition, we hoped that deeper interaction would introduce new R&D-project ideas with the partner organizations.

### **Project description**

The project operated from 1.3.2006 to 31.10.2007. It was funded by the European Union's European Social Fund and the total budget of the project was 385.000 Euro.

The idea in the project was that a teacher searches a partner organization that is willing to cooperate in this project and willing to employ him/her for a three-month period. During this

three months the teacher would not have any responsibilities at the University rather the teacher would work fully for the partner organization. However, teacher's salary will be paid by the University although the teacher is working in other organization. At the same time, the University has to take care of the normal teacher's tasks like tutoring and teaching. Basically, the University had two options. First they could use a stand-in teacher or second postpone the course later.

There were some criteria for the selection process of the teachers for these working life periods. A basic principle was that the teacher has to be willing for three-month period in the working life. Nobody was forced for this period. Other criteria were the length of teachers work history and the need for upgrading the working life experience of the teacher. In principle, teachers with a long time since previous working life period were preferred in the selection process. After selection teachers contacted and negotiated with the possible organizations and agreed on the content and contact persons with the organization. These terms were checked against the funding decision and after that an agreement was written. The goal was that every teacher would find an organization that would fit best for the professional development needs of the teacher. Therefore every teacher was responsible of finding his/her own partner organization for the working period.

The responsibilities of our University in this project were the recruitment of the teachers for this project, guiding and tutoring of the teachers, management of the project, public relations and dissemination of the results. In addition to the supervision of the teacher's work, the responsibilities of the partner organization contained the supply of necessary equipment and rooms and taking care of the details relating to practical matters in the organization.

## **Results**

The results of the project are promising. However, most of the project results are not visible which makes it difficult to concretize, measure and model them. During this project, altogether 23 teachers worked in the partner organizations for three months on average. There were 13 teachers from our school who carried out this period and the rest 10 came from the School of Healthcare. Among the partner organizations were large international organizations like Nokia, Microsoft, Oracle, Teleste, Fujitsu and Aspocomp, but there were also smaller organizations. Finding partner organizations was relatively an easy task, but the timing of the working period was more challenging.

According to the teachers, the working life periods have increased their professional and practical know-how of ICT-sector. The working life periods offered them a possibility to learn by doing in the real life environments of ICT sector. During this time, the teachers had wonderful opportunities to develop their own occupational identity but also to build an understanding about occupational identity of future ICT professionals. The teachers agree that the working life periods have influenced the content of the courses. They also say that they have introduced new teaching methods and they have renewed the course materials. Altogether the teachers say that these periods have initiated some curricula development as well. For example, the working life relevance checking of the curricula and development of common courses with the industry have started. Besides the increase of professional and practical know-how, one of the most valuable results is the strengthening of teachers' occupational identity relating to ICT sector. In addition, these periods have improved the motivation of our teachers.

The project increased cooperation between our University and the working life. We have more guest lecturers and more courses together with the working life. In addition, new R&D-projects are planned and started. Furthermore, as a result of this project new thesis themes and assignments as well as practical training positions for our students have been emerged.

Due to the project, we and our doings and our know-how are now better known in the working life. The industry partners are eager to get our experts into different common projects.

The representatives of the partner organizations have been actively present in the seminars organized during the project.

## **Discussion**

The main result of the project - the professional development of the teachers - is a process, which continues after the project is finished. The development of the professional know-how rose cumulatively during the working life period and the results will concretize into practice with delay. This professional development will continue long after the working life period as part of the teaching. With some teachers this development came out already during the project and with others after the project when teachers returned to teaching. Altogether this was the first time when this wide working life period project providing three months in the working life was implemented in our University.

It was a very good decision that teachers have to find their own partner organizations for their working life periods. This forced teachers to reflect their know-how and to find the areas they have most to develop and learn. In addition, this raised the motivation for the working life period.

The project was warmly welcomed in the working life and practically no problems existed. For the partner organizations, the working life period was almost free of costs: an expert (a teacher) worked three months for the company and the teacher's salary costs were taken care by the project. Since we did not have any middlemen the teacher was the only contact person to the partner organization and this also advanced the success of the project.

During the project, we had some problems placing the working life periods in teachers' yearly working plans. The working plans are made for a calendar year and if we know the needs early enough there are no problems. Now the funding decision came in February and all the working plans were finished. Therefore placing new tasks into these plans was a little problematic process to accomplish. In some cases, we couldn't move the teaching responsibilities to other teachers and some teachers couldn't therefore be part of the project. In other cases, the yearly working load became quite heavy because there were responsibilities beyond teaching that couldn't be taken away and they were just postponed. However, in most cases the working life period was easily embedded in the yearly working plans and an undisturbed three-month period was arranged. Altogether, it would make management easier if the level of bureaucracy is minimized. We could also improve the project implementation if we could fix teachers' working plans early enough.

The lack of electronic information systems and usage of paper forms caused unnecessary delays and clumsiness in the implementation of the project. Making changes to the plans of the project should be simpler. For example, minor changes should be possible to make directly with the supervisor of the project. It is also important that especially at the beginning of the project there is a named contact person available in the funding organization.

Most of the working life periods realized as three-month periods, but the supervisor agreed on splitting the periods into parts when rational reasons existed. However, we see that splitting is not the best way for the working life period, but it is a necessary possibility in some cases. Our opinion is that the goals of the project are better achieved with a solid three-month working life period.

We are quite happy that the unmentioned risk wasn't realized as strongly as it could have realized. When we planned the project we identified that it is a risk to send our experts into the working life: will they return to the University? During the project, only one of our teachers left the University and signed for the company he had worked for the three-month working life period.

## Conclusions

The goals of the project were to promote the working life relevance of our education, upgrade our teachers' know-how and develop cooperation and networking with the University and the working life. The project was a success in relation to the goals mentioned. We were successful in creating a connection between the HEI and the working life. We created a practical and well-functioning model for expert exchange between HEI and the working life. We will start a new project as soon as we can solve the funding. We will also encourage other HEIs to start similar projects in their own Universities.

In the field of higher education, our model is innovative. Instead of increasing academic education, our teachers look for expertise from the working life. Maybe doctoral studies and scientific research are not the only way to increase the expertise of teachers at the Universities of Applied Sciences. Working with real life problems and tasks might give better understanding of what is expected of the future experts in the working life. We appreciate still doctoral studies, but having seen the implications of the working life periods we are very sure of the future needs of these as well. We think that the HEIs should discuss the possibilities and means to develop their teachers' competence.

Our model promotes the communication between education experts and the working life experts. This communication is very valuable and it should be noted in the development of education. We can say that our model is effective both for single teachers and for a degree program as well. However, a long-span development requires time and therefore the results of this project to the development of education will be seen later. A challenge for us is that how we keep the established good contacts with the organizations active now that the project is finished.

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### **Curriculum Vitae**

**Juha Kontio:** Director of education, The School of Telecommunication and e-Business, Turku University of Applied Sciences, Turku, Finland (since 2004). Received Ph.D. in Information Systems (2004) from Turku School of Economics. Long experience in developing education in higher education.

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